

WHAT IS CLAIMED IS:

1        1.        A liquid ejection head, comprising:  
2                a metallic chamber formation plate, having a first region in which a  
3        plurality of pressure generating chambers are formed, and a second region in  
4        which a plurality of dents are formed; and  
5                a metallic nozzle plate, formed with a plurality of nozzles, the nozzle  
6        plate joined to the chamber formation plate such that each of the nozzles is  
7        communicated with one of the pressure generating chambers.

1        2.        The liquid ejection head as set forth in claim 1, wherein the dents are  
2        formed on at least one of main faces of the chamber formation plate.

1        3.        The liquid ejection head as set forth in claim 2, wherein a position of  
2        one of the dents formed on one main face of the chamber formation plate is  
3        made coincident with a position of one of the dents formed on the other main  
4        face of the chamber formation plate, when viewed from one of the main faces.

1        4.        The liquid ejection head as set forth in claim 1, wherein each of the  
2        dents has a pyramidal shape.

1        5.        The liquid ejection head as set forth in claim 1, wherein each of the  
2        dents has a conical shape.

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1 6. The liquid ejection head as set forth in claim 1, wherein a size of each  
2 of the dents is not greater than a thickness of the chamber formation plate.

1 7. The liquid ejection head as set forth in claim 1, wherein each of dents  
2 is formed at a portion where is away from the first region by a distance not less  
3 than a thickness of the chamber formation plate.

1 8. The liquid ejection head as set forth in claim 1, wherein the dents are  
2 arranged with an interval which is substantially equal to a thickness of the  
3 chamber formation plate.

1 9. The liquid ejection head as set forth in claim 1, wherein the chamber  
2 formation plate is comprised of nickel.

1 10. The liquid ejection head as set forth in claim 1, wherein the first region  
2 is located at a center portion of the chamber formation chamber while being  
3 surrounded by the second region.

1 11. The liquid ejection head as set forth in claim 10, wherein the dents  
2 are formed at positions opposed to each other with the first region between.

1 12. The liquid ejection head as set forth in claim 1, wherein the pressure  
2 generating chamber are arranged with an interval which is not greater than  
3 0.3mm.

1        13.        The liquid ejection head as set forth in claim 1, wherein the first region  
2        and the second region are partly overlapped at a third region adjacent to both  
3        longitudinal ends of the pressure generating chambers.

1        14.        The liquid ejection head as set forth in claim 13, wherein the dents in  
2        the third region are arranged with a fixed pitch which is two to five times as  
3        great as a pitch of which the pressure generating chamber is arranged side by  
4        side.

1        15.        The liquid ejection head as set forth in claim 1, wherein the second  
2        region is provided with a length which is two to five times as great as a pitch of  
3        which the pressure generating chamber is arranged side by side.

1        16.        A method of manufacturing a liquid ejection apparatus, comprising  
2        steps of:  
3                providing a metal board;  
4                subjecting the metal board to a plastic working to form a plurality of  
5        recesses on a first face in a first region of the metal board;  
6                punching through holes so as to communicate the recesses and a  
7        second face of the metal board;  
8                subjecting the metal board to a plastic working to form a plurality of  
9        dents in a second region of the meal board;  
10              joining a metallic sealing plate onto the first face of the metal board so  
11        as to seal the recesses; and  
12              joining a metallic nozzle plate formed with nozzles, onto the second

13 face of the metal board, such that each of the nozzles is communicated with  
14 one of the through holes.

1 17. The manufacturing method as set forth in claim 16, wherein the dents  
2 are so formed as to extend in a thickness direction of the metal board.

1 18. The manufacturing method as set forth in claim 16, wherein the dents  
2 are formed on one of the first face and the second face which has been an  
3 inner side of the metal board curved by the plastic working for forming the  
4 recesses.

1 19. The manufacturing method as set forth in claim 18, wherein the dents  
2 are formed on both of the first face and the second face.

1 20. The manufacturing method as set forth in claim 16, further comprising  
2 a step of polishing the metal board so as to leave the dents thereon, before the  
3 sealing plate and the nozzle plate are joined to the metal board.

1 21. The manufacturing method as set forth in claim 20, wherein the metal  
2 board and the sealing plate are joined with adhesive agent, while excess  
3 adhesive agent is received by the dents.

1 22. The manufacturing method as set forth in claim 21, wherein the first  
2 region and the second region are so arranged as to partly overlap at a third  
3 region adjacent to both longitudinal ends of the recesses.

1 23. The manufacturing method as set forth in claim 16, wherein the  
2 plastic working for forming the dents are performed before the plastic working  
3 for forming the recesses.

1 24. The manufacturing method as set forth in claim 20, wherein the dents  
2 are formed such that a polished amount in the first region and a polished  
3 amount of the second region are made identical.

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